

CLAIMS

What is claimed is:

Claims
1. 1.17
2. 439/55
3. HAP

1. A lead routing module for routing one or more signals between two devices in a suspension assembly, comprising:
a nonconducting body;
a first set of electrical contact regions positioned on said nonconducting body;
a second set of electrical contact regions positioned on said nonconducting body; and
a plurality of conducting leads coupled between said first and second sets of electrical contact regions for routing said signals between said first and said second sets of electrical contact regions.

2. The lead routing module of claim 1, further comprising an upper conductive central region positioned on a top surface of said nonconducting body, said upper conductive central region having a plurality of conductive bumps extending above said top surface of said nonconducting body.

1 3. The lead routing module of claim 2, further comprising
2 a lower conductive region positioned on a bottom surface of said
3 nonconducting body.

1 4. The lead routing module of claim 2, wherein one or more
2 of said plurality of bumps extends approximately 30 to 50 microns
3 above said top surface of said nonconducting body.

1 5. The lead routing module of claim 3, wherein said lower
2 conductive region is a conductive plate that extends over
3 substantially all of said lower surface of said nonconducting
4 body.

1 6. The lead routing module of claim 1, wherein at least
2 one of said first and second sets of electrical contact regions
3 represents a plurality of bonding pads.

1 7. The lead routing module of claim 3, further comprising
2 a grounding electrode coupled between said upper conductive
3 central region and said lower conductive region.

1 8. The lead routing module of claim 7, wherein said
2 grounding electrode is a via hole.

1 9. The lead routing module of claim 7, wherein said
2 grounding electrode is a side-wrapping electrode.

1 10. The lead routing module of claim 1, wherein said first
2 set of electrical contact regions is formed on a first surface of
3 said nonconducting body and said second set of electrical contact
4 regions are formed on a second surface of said nonconducting
5 body, wherein said first and second surfaces are adjacent
6 surfaces.

1 11. The lead routing module of claim 1, wherein said first
2 set of electrical contact regions are formed on a first surface
3 of said nonconducting body and said second set of electrical
4 contact regions are formed on a second surface of said
5 nonconducting body, wherein said first and second surfaces are
6 non-adjacent surfaces.

1 12. The lead routing module of claim 1, wherein at least
2 one of said first and second sets of electrical contact regions
3 is located on an upper surface of said nonconducting body.

1 13. The lead routing module of claim 1, wherein at least
2 one of said first and second sets of electrical conductive
3 regions is located on a side surface of said nonconducting body.

1 *Sub* 14. A suspension assembly comprising:
2 *Al* a slider/head assembly;
3 a suspension; and
4 an interconnect module coupled between said suspension and
5 said slider/head assembly to route one or more data signals
6 between said suspension and said slider/head assembly.

1 15. The suspension assembly of claim 14, wherein said
2 suspension is an integrated lead suspension.

1 16. The suspension assembly of claim 14, wherein said
2 suspension is configured for in-line mounting of said slider/head
3 assembly.

1 *Sub* 17. The suspension assembly of claim 16, wherein said
2 *as* slider/head assembly is orthogonally mounted onto said
3 suspension.

1 18. A suspension assembly comprising:
2 a slider/head assembly;
3 a suspension;
4 a microactuator; and
5 an interconnect module coupled between said suspension and
6 said microactuator to route one or more data signals between said
7 suspension and said microactuator.

1 19. The suspension assembly of claim 18, wherein said
2 suspension is an integrated lead suspension.

1 20. The suspension assembly of claim 18, wherein said
2 suspension includes a first set of termination leads coupled to
3 said slider/head assembly and a second set of termination leads
4 coupled to said interconnect module.

1 21. An assembly, comprising:
2 a first device;
3 a second device; and
4 an interconnect device coupled between said first and second
5 devices to route one or more signals between said first and
6 second devices.

1 22. The assembly of claim 21, wherein said first device is
2 a slider/head assembly and said second device is a suspension.

1 23. The assembly of claim 21, wherein said first device is
2 a microactuator and said second device is a suspension.

1 *Sub* 24. A storage device, comprising:
2 *A3* a disk;
3 a spindle motor positioned to support and rotate said disk;
4 a suspension assembly including an interconnect module
5 coupled between a slider/head assembly and a suspension to route
6 one or more data signals between said suspension and said
7 slider/head assembly; and

8 an actuator coupled to said suspension assembly and operable
9 to position said suspension assembly above said disk to access
10 said disk for reading and/or writing operations.

1 25. The storage device of claim 24, wherein said suspension
2 is an integrated lead suspension.

1 26. The storage device of claim 24, wherein said suspension
2 is configured for in-line mounting of said slider/head assembly.

1 *Sub* 27. A test system for disks, comprising:
2 *A4* a spindle motor for rotating a disk during a test operation;
3 and
4 a test platform including a suspension assembly coupled to
5 an actuator, said actuator operable to position said suspension
6 assembly above said disk to access said disk for said test
7 operation, said suspension assembly including an interconnect
8 module coupled between a slider/head assembly and a suspension to
9 route one or more data signals between said suspension and said
10 slider/head assembly.

1 28. The test system of claim 27, wherein said suspension is
2 an integrated lead suspension.

1 29. The test system of claim 27, wherein said suspension is
2 configured for in-line mounting of said slider/head assembly.

1 *Just* 30. The test system of claim 29, wherein said slider/head
2 *of* assembly is orthogonally mounted on said suspension.

1 31. A storage device, comprising:
2 a disk;
3 a spindle motor positioned to support and rotate said disk;
4 a suspension assembly including an interconnect module
5 coupled between a suspension and a microactuator to route data
6 signals between said suspension and said microactuator; and
7 an actuator coupled to said suspension assembly and operable
8 to position said suspension assembly above said disk to access
9 said disk for reading and/or writing operations.

1 32. The storage device of claim 31, wherein said suspension
2 is an integrated lead suspension.

1 *Sub 1* 33. The storage device of claim 31, wherein said suspension
2 is configured for in-line mounting of said slider/head assembly.

1 *Sub 1* 34. A test system for disks, comprising:
2 *AG* a spindle motor for rotating a disk during a test operation;
3 and
4 a test platform including a suspension assembly coupled to
5 an actuator, said actuator operable to position said suspension
6 assembly above said disk to access said disk for said test
7 operation, said suspension assembly including an interconnect
8 module coupled between a suspension and a microactuator to route
9 data signals between said suspension and said microactuator.

1 35. The test system of claim 34, wherein said suspension is
2 an integrated lead suspension.

1 *Sub 1* 36. The test system of claim 34, wherein said suspension is
2 configured for in-line mounting of said slider/head assembly.

1 *Sub 1* 37. The test system of claim 36, wherein said slider/head
2 assembly is orthogonally mounted onto said suspension.